



AGENDA

Workshop on GIS Tools Supporting Ecosystem Approaches to Management

**NOAA Coastal Services Center, Charleston, South Carolina
September 8-10, 2004**



NOAA's Ocean Service



NOAA Fisheries



Workshop Goals

- Increase awareness and demonstrate the capabilities of ecosystem-based fishery management, and how spatial data and geoprocessing techniques can be used support these efforts.
- Understand the priority issues facing fishery managers and scientists in developing and implementing ecosystem-based fishery management plans.
- Develop requirements for GIS tools to support the needs of fishery managers and scientists, and ensure that these requirements are broad enough to serve all regions of the country.
- Provide clear guidance for the joint NMFS/NOS GIS tool development project.



Agenda Summary

Session 1: Wednesday, Sep. 8 – Morning

Applications of GIS Supporting Ecosystem Approaches to Management

This session will demonstrate the state of the art on applying GIS to ecosystem management in marine fisheries or in allied fields. Specific attention should be given to actual GIS tools, analyses, or procedures that are in use and the spatially related needs that have arisen through their application to real problems.

Session 2: Wednesday, Sep. 8 – Afternoon

Management Needs

Representatives from the Fishery Management Councils will describe interactions between fishery management plans and any limitations regarding, for example, EFH, trophic interactions, bycatch interactions etc. Each council will point out the type of decision-making that is done with available information, and what information is needed.

Session 3: Thursday, Sep. 9 – Morning

Data Availability and Data Gaps

The purpose of this session is to gauge the richness or sparseness of spatial data relating to the Atlantic Ocean and the Gulf of Mexico, and to learn from the experiences of our Pacific Coast colleagues. Each presenter should provide a description of the spatial data for which their organization has primary responsibility for collecting and maintaining or for which they have special experience in utilizing for ecosystem-based management. Also of interest in this session are notable gaps in spatial data that may hinder ecosystem-based approaches to management.

Session 4: Thursday, Sep. 9 – Afternoon

Science Needs

The Science Needs session will survey the spatial analyses or tools that living marine resource scientists need to understand individual components of an ecosystem and how those components interact. Topics of discussion may include but are not limited to delineation of ecosystem boundaries, characterizing species distribution and abundance, spatial variation in food webs, ecosystem model choice and spatial data or analysis requirements, analytical framework development, etc.

Session 5: Friday, Sep. 10 – Morning

Workshop Wrap-up and Feedback

A summary of the needs recorded during the workshop will be presented along with a plan for moving forward. The needs and plans will be discussed in breakout sessions. Feedback will be essential for guiding the joint NOAA Fisheries/NOS project to develop GIS tools supporting the Ecosystem Pilot Projects.





Session 1: Wednesday, Sep. 8 – Morning

- 8:00 am **Coffee and continental breakfast**
- 8:30 am **Welcome to Participants**
Margaret Davidson, Director, NOAA Coastal Services Center
- 8:40 am **Introduction & Overview: The Challenges of Managing Marine Resources in 5 Dimensions**
Steve Murawski, Project Manager, Ecosystem Pilot Projects
NOAA-Fisheries, Office of Science and Technology

Applications of GIS Supporting Ecosystem Approaches to Management

- 9:00 am **Biogeographic Assessments: The Integration of Ecology and GIS to Support Fishery Science and Management**
Mark E. Monaco, NOS Biogeography Program Manager (presenter)
John D. Christensen, NOS Marine Biologist
David M. Nelson, NOS Marine Biologist
- National Centers for Coastal Ocean Science-Center for Coastal Monitoring & Assessments*
- 9:30 am **Assessing Risk to the Essential Fish Habitat of West Coast Groundfish**
Stephen Copps, Senior Policy Analyst (presenter)
NMFS Northwest Region
- Graeme Parkes*
Marine Resources Assessment Group
- Allison Bailey, Senior GIS Analyst*
TerraLogic GIS
- Mary Yoklavich, Habitat Ecology Team Lead*
NMFS Southwest Fisheries Science Center, Santa Cruz Laboratory
- Waldo Wakefield, Habitat Conservation and Engineering Team Lead*
NMFS Northwest Fisheries Science Center, Fishery Resource Analysis and Monitoring Division

10:00 am Break



- 10:15 am **Using an Interdisciplinary GIS Approach to Support Marine Ecosystem Management at the Fish and Wildlife Research Institute, Florida**
Henry Norris, Program Administrator, Florida Fish and Wildlife Conservation Commission – Fish and Wildlife Research Institute
- 10:45 am **Ecosystem-based Regional Marine Conservation Planning: The Nature Conservancy's Approach to Ecoregional Assessments in the Marine Environment**
Dan Dorfman, Senior Marine Conservation Planner (presenter)
Mike Beck, Senior Scientist
The Nature Conservancy - Global Marine Initiative
- 11:15 am **GIS-based Visualizations In Support of Fisheries Research and Ecosystem Management**
Christopher Moore (presenter)¹, Tiffany Vance², and Nazila Merati³

¹Univ. of Washington/NOAA Pacific Marine Environmental Lab
²NOAA Fisheries Alaska Fisheries Science Center (AFSC)
³NOAA Pacific Marine Environmental Lab
- 12:00 pm **Lunch, poster session, and interactive computer demonstrations**

Session 2: Wednesday, Sep. 8 – Afternoon

Management Needs

- 2:00 pm **Presentations from Fishery Management Councils**

Gregg Waugh and Roger Pugliese, South Atlantic Fishery Management Council
Chad Demarest, New England Fishery Management Council
Dr. Tom Hoff, Mid-Atlantic Fishery Management Council
- 3:00 pm **Questions for panelists and discussion of management needs**

Questions to spark spatial thinking:
- What spatial data, analyses, and mapping capabilities do FMCs need in order to manage fisheries from an ecosystem perspective?



- If you could design the ultimate map to communicate your management decisions or fishery ecosystem plans to stakeholders, what would the map contain?
- How do council staff and your stakeholders use maps (hang them on walls, carry them to meetings, draw on them, email them, interact with them online)?
- How would you evaluate the performance of a fishery ecosystem plan?
- What issues does your Council have regarding EFH, trophic interactions, bycatch interactions etc? What spatial tools do you need to resolve these issues?
- What are the top 10 requests you get for spatial data or analyses?

4:30 pm **Wrap-up and summary of management needs**

5:00 pm **Adjourn**



Session 3: Thursday, Sep. 9 – Morning

8:00 am **Coffee and continental breakfast**

Available Data and Data Gaps

8:30 am **GIS Data for Research to Support Ecosystem-based Management - SEFSC**
Steve Wong, NOAA Fisheries Southeast Fishery Science Center

9:00 am **The Need For Improved GIS Capabilities and an Overview of NEFSC Data on Fish Distribution, Hydrography and Seabed Habitat**
Dr. Thomas Noji, Division Chief (presenter)
Steven Fromm, IT Specialist
Suellen Fromm, IT Specialist
John Manderson, Fisheries Research Biologist

Northeast Fisheries Science Center, Howard Marine Lab, Sandy Hook, NJ

9:30 am **GIS Activities within the National Ocean Service**
Tony LaVoi, Acting Deputy Branch Chief
Coastal Information Services

10:00 am Break

10:15 am **Data Management at NCDDC**
Sharon Mesick, Deputy Chief Scientist
NOAA National Coastal Data Development Center

10:45 am **Data Gaps in the Risk Assessment for West Coast Groundfish EFH**
Waldo Wakefield, Habitat Conservation and Engineering Team Lead
NOAA Fisheries Northwest Fisheries Science Center

11:15 am **Discussion of Data Presentations**

11:45 am Lunch



Session 4: Thursday, Sep. 9 – Afternoon

Science Needs

- 1:00 pm **Spatial Analysis Needs for Marine Ecosystem Management: Habitat Characterization, Spatio-temporal Models and Connectivity Analysis Frameworks**
*Pat Halpin, Director, Geospatial Analysis Program
Nicholas School of the Environment and Earth Sciences, Duke University*
- 1:30 pm **Beyond Maps: Using GIS to Identify Models and Evaluate Trade-offs in Fisheries Science**
*Paul Rago (presenter), Steven Murawski, Susan Wigley, and Charles Keith
NMFS Northeast Fisheries Science Center*
- 2:00 pm **Dolphinfish in the Western Atlantic—an Ecosystem Based Case Study**
Kristen Kleisner¹ (presenter) and Joshua Sladek Nowlis²

*¹University of Miami, RSMAS
²NOAA Fisheries Southeast Fisheries Science Center*
- 2:30 pm **Break**
- 2:45 pm **Questions for scientists and discussion of science needs**
- 4:30 pm **Wrap-up and summary of science needs**
- 5:00 pm **Adjourn**
- 6:30 pm **Evening dinner/social – “Low Country Boil” at James Island County Park. Caravan leaves the Double Tree Guest Suites at 6:15 pm.**



Session 5: Friday, Sep. 10 – Morning

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| 8:00 am | Coffee and continental breakfast |
| 8:30 am | Presentation on “straw man” GIS framework proposed and developed to date, and a summary of workshop recommendations |
| 9:00 am | Breakout group discussions to get feedback on compiled needs and proposed project |
| 10:30 am | Break |
| 10:45 am | Presentation of feedback to larger group |
| 11:15 am | Summary, wrap-up, the way forward |
| Noon | Adjourn |